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A CONTRIBUTION TO OUR KNOWLEDGE OF THE ORCHIDS OF SPANISH HONDURAS PART I

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WILLIAM BOTTING HEMSLEY, in 1883, published in Godman and Salvin's *Biologia Centrali-Americana*, an enumeration of the plants that had been collected in Middle America. For the Republic of Honduras he found records of less than one hundred and sixty species including four orchids, and of these several were cited in his enumeration on questionable evidence. He stated that his only reason for giving Honduras a place in his geographical tables was to show how little was then known about the Honduranian flora. Rudolf Schlechter, in 1918, published his *Kritische Aufzählung der bisher aus Zentral-Amerika bekanntgewordenen Orchidaceen*. For Honduras he cited every species of orchid for which he found a record. In his remarks about the flora he simply reiterated the statement made by Hemsley and characterized Honduras as being botanically the least known of the Central American countries. He included fifteen genera and eighteen species of orchids in his enumeration. We know now that two of these species are from British rather than Spanish Honduras and that two are as yet not known to be natives of Central America.

Until 1923, orchidological exploration in Honduras

had hardly begun. Up to that year a few collectors had visited the Atlantic ports. Carl Thiéme, between 1887 and 1890, had explored the country around San Pedro Sula in the Department of Santa Barbara. Gustav Niederlein in 1898 made a collection of about 459 numbered specimens in the vicinity of Tegucigalpa, and H. Pittier in 1919 made botanical collections in Copán. But none of these men specialized in orchids and their contributions to orchidology were inconsiderable. Indeed, they added very few species to the list prepared by Hemsley for his enumeration.

Since 1923 our knowledge of the orchid flora of Honduras has been rapidly increased. In March 1923, I spent about three weeks near the Atlantic coast collecting in the Departments of Atlántida, Yoro and Colón where I found thirty-five genera and seventy-nine species. In 1923 and in 1929, Herbert J. Spinden, while conducting archiological investigations in the Departments of Colón and Copán, collected orchids as a diversion. He rediscovered the rare *Laelia Wendlandii* Reichb.f. and added *Brassavola cucullata* (L.) R. Br., *Brassia caudata* Lindl., *Epidendrum chinense* (Lindl.) Ames and *Epidendrum abbreviatum* Schltr. to the list of recorded species. In 1926, Mrs. Elizabeth R. Mitchell made a small collection of plants near Tela, but only two orchids, namely *Ionopsis utricularioides* Lindl. and *Maxillaria tenuifolia* Lindl. are represented among the specimens I have examined. From December 6, 1927 to March 20, 1928, Paul C. Standley collected intensively in the Lancetilla Valley¹⁾ near Tela in the Department of Atlántida, and spent part of his time exploring the country around Siguatepeque. Standley found fifty-eight species representing thirty-one genera of orchids. In March and April 1931, Marston

¹⁾ Flora of the Lancetilla Valley, Honduras, in Field Museum of Natural History, Botanical Series vol. 10, Publication 283. (1931)

Bates entered Honduras from the Pacific coast and explored the country through which he passed in approaching Tegucigalpa and Danli from Ampala and Choluteca, and then, beginning in July 1931, James Brannon Edwards, working for the Arnold Arboretum of Harvard University, explored in the Departments of Tegucigalpa, Comayagua, Cortés and Yoro, adding materially to our records of the orchid flora and supplying specimens that shed helpful light on several perplexing problems.

Before passing to a consideration of the orchid flora of Honduras as it is now known, I think it may be helpful to give a list of the species cited by Schlechter, together with a list of the species reported from Honduras up to the year 1923.

Schlechter's list is as follows:¹⁾(The species followed by an asterisk are cited from Honduras in Hemsley's enumeration.)

1. *Bletia tuberosa* (L.) Ames as *Bletia alta* (L.) Hitchc.
2. *Brassavola nodosa* (L.) Lindl.*
3. *Catasetum maculatum* Kunth* Probably referable to *C. integerrimum* Hook.
4. *Cattleya Bowringiana* Veitch
5. *Coryanthes picturata* Reichb.f.
6. *Epidendrum gratiosum* Reichb.f.
7. *Epidendrum stenopetalum* Hook.*
8. *Laelia rubescens* Lindl.
9. *Oncidium excavatum* Lindl.*

¹⁾*Spiranthes* is assigned three species in Schlechter's table of genera, but only one, namely *Spiranthes hondurensis* Schltr., is referred to Honduras in the list of species. On page 349 of his enumeration, Schlechter assigned *Habenaria* to the genera coming from Honduras, but in his table of genera on page 368 he omitted this genus and under the Central American species he failed to cite Honduras as a locality from which material had been recorded.

10. *Pleurothallis longissima* Lindl. as *Pleurothallis Niederleinii* Schltr.
11. *Polystachya clavata* Lindl.
12. *Sarcoglottis Thelymitra* (Reichb.f.) Ames as *Spiranthes hondurensis* Schltr.
13. *Stenorrhynchus orchiodes* (Sw.) L. C. Rich.
14. *Stenorrhynchus speciosus* (Sw.) L. C. Rich.
15. *Trigonidium Egertonianum* Batem.
16. *Vanilla fragrans* (Salisb.) Ames as *Vanilla planifolia* Andrews

The names printed in italics represent species that are doubtful. *Cattleya Bowringiana* Veitch was originally collected in British Honduras. I have failed to find any evidence of its occurrence in Honduras. *Coryanthes picturata* Reichb.f. was originally found near Belize in British Honduras. When in Orchis 10(1916)72, Schlechter monographed the genus *Coryanthes*, he failed to cite Belize as the type locality of *C. picturata*, and it would seem that he carried over the error of that earlier publication when he prepared his enumeration published in 1918, because in his table of genera he failed to add *Coryanthes* to the genera native to British Honduras and assigned one species to *Coryanthes* in the column devoted to the genera of Spanish Honduras. *Epidendrum gratio-sum* Reichb.f. was originally reported from South America. No authentic material from Central America has been noted and it is very probable that the extension of range rests on an erroneous identification. *Oncidium excavatum* Lindl. is a native of Peru and Ecuador. I have not seen any Central American specimens referable to it. It is significant that Fritz Kränzlin in his monograph of *Oncidium* did not cite specimens of this species from Central America.

At the beginning of 1923, the orchid flora of Honduras, from the records I had made, comprised fourteen

genera and twenty-one species as follows:

1. *Bletia tuberosa* (L.) Ames
2. *Brassavola nodosa* (L.) Lindl.
3. *Catasetum integerrimum* Hook.
4. *Catasetum viridiflavum* Hook. cf. *Addisonia* 2 (1917) sub t. 53
5. *Epidendrum paleaceum* (Lindl.) Reichb.f.
6. *Epidendrum Stamfordianum* Batem.
7. *Epidendrum stenopetalum* Hook.
8. *Epidendrum xipheres* Reichb.f.
9. *Erythroides vaginata* (Hook.) Ames
10. *Laelia rubescens* Lindl.
11. *Liparis elata* Lindl.
12. *Oncidium pusillum* (L.) Reichb.f.
13. *Oncidium sphacelatum* Lindl.
14. *Pleurothallis longissima* Lindl.
15. *Pleurothallis stenostachya* Reichb.f.
16. *Sarcoglottis Thelymitra* (Reichb.f.) Ames
17. *Schomburgkia tibicinis* Batem.
18. *Stenorrhynchus orchioides* (Sw.) L.C. Rich.
19. *Stenorrhynchus speciosus* (Sw.) L.C. Rich.
20. *Trigonidium Egertonianum* Batem.
21. *Vanilla fragrans* (Salisb.) Ames

The lists of genera and species given above are interesting chiefly as evidence that the botanical exploration of Honduras had progressed very slowly in the thirty-five years that passed following the publication of Hemsley's enumeration and the appearance of Schlechter's critical survey of the orchid flora of Middle America, a space of time in which the countries north and south had been yielding a rich harvest to botanical and horticultural collectors. Indeed, until recent times our knowledge of the Honduranian flora had remained so inconsiderable that one would hesitate before using it in a comparative study of orchid distribution in the countries of Middle America.

Although it is yet early to generalize with regard to the characteristics of the Honduranian orchid flora as it is related to the floras of Mexico, Guatemala, Salvador, Nicaragua, British Honduras, Costa Rica and Panama, a synopsis of the major groups while indicating the substantial increase that has been made in the number of genera since Schlechter's enumeration was published sixteen years ago may prove useful to students whose interests centre in the broader aspects of plant distribution.

A SYNOPSIS OF THE GENERA BASED ON SCHLECHTER'S SYSTEM OF CLASSIFICATION

- I. HABENARIEAE
 1. *Habenaria Willdenow*, Sp. Pl. 4, pt. 1 (1805) 44.
- II. VANILLEAE
 2. *Vanilla Swartz* in Nov. Act. Ups. 6 (1799) 66, t. 5.
- III. SOBRALIEAE
 3. *Elleanthus Presl*, Rel. Haenk. 1 (1830) 97.
 4. *Sobralia Ruiz & Pavon*, Fl. Peruv. et Chil. Prodr. (1794) 120, t. 26.
- IV. BLETILLEAE
 5. *Crybe Lindley*, Nat. Syst. Bot. ed. 2 (1836) 446.
- V. CRANICHIDEAE
 6. *Wulfschlaegelia Reichenbach filius* in Bot. Zeit. 21 (1863) 131.
 7. *Prescottia Lindley* in Hooker, Exot. Fl. 2 (1824) t. 115.
 8. *Cranichis Swartz*, Prodr. Veg. Ind. Occ. (1788) 8, 120.
 9. *Ponthieva R. Brown* in Aiton, Hort. Kew. ed. 2, 5 (1813) 199.
- VI. SPIRANTHEAE
 10. *Spiranthes L.C. Richard*, Orch. Europ. (1817) 20, 28; in Mém. Mus. Par. 4 (1818) 42, 50.
 11. *Pelexia Poiteau apud L.C. Richard*, Orch. Europ. (1817) 37, *nomen*; in Mém. Mus. Par. 4 (1818) 59, *nomen*—Sprengel, Gen. Pl. (1831) 658.
 12. *Sarcoglottis Presl*, Rel. Haenk. 1 (1830) 95, t. 15.
 13. *Stenorrhynchus L.C. Richard*, Orch. Europ. (1817) 37, *nomen*; in Mém. Mus. Par. 4 (1818) 59, *nomen*—Sprengel, Gen. Pl. (1831) 660.

VII. PHYSUREAE

14. *ERYTHRODES* *Blume*, Bijdr. Fl. Ned. Ind. (1825) 410; Tab. (1825) t. 72.

VIII. PLEUROTHALLIDEAE

15. *Stelis Swartz* in *Schrad. Journ.* 2 (1799) 239.
16. *Physosiphon Lindley* in *Bot. Reg.* 21 (1835) t. 1797.
17. *Masdevallia Ruiz & Pavon*, Fl. Peruv. et Chil. Prodr. (1794) 122, t. 27.
18. *Lepanthes Swartz* in *Nov. Act. Ups.* 6 (1799) 85.
19. *Lepanthopsis Ames* in *Bot. Mus. Leaf. Harv. Univ.* 1, no. 9 (1933) 3.
20. *Pleurothallis R. Brown* in *Aiton, Hort. Kew. ed.* 2, 5 (1813) 211.
21. *Restrepia Humboldt, Bonpland & Kunth*, *Nov. Gen. et Sp.* 1 (1816) 366 (Quarto ed.), 293 (Folio ed.), t. 94.
22. *Octomeria R. Brown* in *Aiton, Hort. Kew. ed.* 2, 5 (1813) 211.

IX. LIPARIDEAE

23. *Malaxis Solander apud Swartz*, *Prodr. Veg. Ind. Occ.* (1788) 8, 119.
24. *Liparis L. C. Richard*, *Orch. Europ.* (1817) 31, 38; in *Mém. Mus. Par.* 4 (1818) 43, 52.

X. LAELIEAE

25. *Epidendrum Linnaeus*, *Syst. Nat. ed.* 10 (1759) 1246 *pro parte*—*ampl. Necker, Elem.* 3 (1790) 133 *ex parte*.
26. *Cattleya Lindley*, *Collect. Bot.* (1824) tt. 33, 37.
27. *Laelia Lindley*, *Gen. & Sp. Orch. Pl.* (1831) 115.
28. *Schomburgkia Lindley*, *Sert. Orch.* (1838) tt. 10, 13.
29. *Brassavola R. Brown* in *Aiton, Hort. Kew. ed.* 2, 5 (1813) 216.

XI. PONEREAE

30. *Hartwegia Lindley* in *Bot. Reg.* 23 (1837) sub t. 1970.
31. *Scaphyglottis Poeppig & Endlicher*, *Nov. Gen. ac Sp.* 1 (1835) 58.
32. *Hexisea Lindley* in *Hook. Journ. Bot.* 1 (1834) 7.
33. *Ponera Lindley*, *Gen. & Sp. Orch. Pl.* (1831) 113.
34. *Isochilus R. Brown* in *Aiton, Hort. Kew. ed.* 2, 5 (1813) 209.
35. *Hexadesmia Brongniart* in *Ann. Sci. Nat. ser.* 2, 17 (1842) 44.
36. *Arpophyllum La Llave & Lexarza*, *Nov. Veg. Descr.* 2

- (1825) (Orch. Opusc.) 19.
37. *Coelia Lindley*, Gen. & Sp. Orch. Pl. (1830) 36.
- XII. POLYSTACHYAEAE
38. *Polystachya Hooker*, Exot. Fl. 2 (1824) t. 103.
39. *Galeandra Lindley* in Bauer, Illustr. Orch. Pl.-Gen. (1832) t. 8.
- XIII. CORALLORRHIZEAE
40. *Corallorrhiza [Haller] R. Brown* in Aiton, Hort. Kew. ed. 2, 5 (1813) 209.
- XIV. PHAJEAE
41. *Bletia Ruiz & Pavon*, Fl. Peruv. et Chil. Prodr. (1794) 119, t. 26.
- XV. CHYSIEAE
42. *Chysis Lindley* in Bot. Reg. 23 (1837) t. 1937.
- XVI. BULBOPHYLLEAE
43. *Bulbophyllum Thouars*, Hist. Pl. Orch. (1822) Tabl. des espèc. III & tt. 93-97.
- XVII. CYRTOPODIEAE
44. *Govenia Lindley* in Loddiges, Bot. Cab. 18 (1831) t. 1709, *nomen*; Gen. & Sp. Orch. Pl. (1832) 153.
- XVIII. CATASETEAE
45. *Mormodes Lindley*, Nat. Syst. Bot. ed. 2 (1836) 446.
46. *Catasetum L.C. Richard apud Kunth*, Syn. Pl. Aequin. 1 (1822) 330.
47. *Cynoches Lindley*, Gen. & Sp. Orch. Pl. (1832) 154.
- XIX. GONGOREAE
48. *Lacaena Lindley* in Bot. Reg. 29 (1843) Misc. p. 68.
49. *Stanhopea Frost apud Hooker* in Bot. Mag. 56 (1829) tt. 2948, 2949.
50. *Gongora Ruiz & Pavon*, Fl. Peruv. et Chil. Prodr. (1794) 117, t. 25.
51. *Coryanthes Hooker* in Bot. Mag. 58 (1831) t. 3102.
- XX. LYCASTEAE
52. *Xylobium Lindley* in Bot. Reg. 11 (1825) sub t. 897.
53. *Lycaste Lindley* in Bot. Reg. 29 (1843) Misc. p. 14.
- XXI. HUNTLEYEAE
54. *Warszewiczella Reichenbach filius* in Bot. Zeit. 10 (1852) 635 (as *Warczewiczella*).
- XXII. MAXILLARIEAE
55. *Maxillaria Ruiz & Pavon*, Fl. Peruv. et Chil. Prodr. (1794) 116, t. 25.

56. *Camaridium* *Lindley* in Bot. Reg. 10 (1824) sub t. 844.
 57. *Ornithidium* *Salisbury* in Trans. Hort. Soc. 1 (1812) 293, *nomen*—apud R. Brown in Aiton, Hort. Kew. ed. 2, 5 (1813) 210.
 58. *Mormolyce* *Fenzl*, Nov. quaed. Gen. et Sp. Pl. (1849) 1; in Denkschr. Akad. Wissensch. Wien, Math.-Naturwiss. Cl. 1 (1850) 253 (both as *Mormolyca*).
 59. *Trigonidium* *Lindley* in Bot. Reg. 23 (1837) t. 1923.
- XXIII. COMPARETTIEAE
60. *Ionopsis* *Humboldt*, *Bonpland* & *Kunth*, Nov. Gen. et Sp. 1 (1816) 348 (Quarto ed.), 279 (Folio ed.), t. 83.
 61. *Seelochilus* *Klotzsch* in Allg. Gartenz. 9 (1841) 261.
 62. *Comparettia* *Poeppig* & *Endlicher*, Nov. Gen. ac Sp. 1 (1835) 42, t. 73.
- XXIV. TRICHOPILIEAE
63. *Trichopilia* *Lindley*, Nat. Syst. Bot. ed. 2 (1836) 446.
- XXV. ONCIDIEAE
64. *Osmoglossum* *Schlechter* in Orchis 10 (1916) 162 (as subgenus); in Fedde Repert. Beihefte 17 (1922) 79.
 65. *Odontoglossum* *Humboldt*, *Bonpland* & *Kunth*, Nov. Gen. & Sp. 1 (1816) 350 (Quarto ed.), 281 (Folio ed.), t. 85.
 66. *Brassia* *R. Brown* in Aiton, Hort. Kew. ed. 2, 5 (1813) 215.
 67. *Miltonia* *Lindley* in Bot. Reg. 23 (1837) sub t. 1976 & t. 1992.
 68. *Oncidium* *Swartz* in K. Vet.-Akad. Nya Handl. Stockh. 21 (1800) 239.
 69. *Leochilus* *Knowles* & *Westcott*, Floral Cab. 2 (1838) 143.
- XXVI. LOCKHARTIEAE
70. *Lockhartia* *Hooker* in Bot. Mag. 54 (1827) t. 2715.
- XXVII. ORNITHOCEPHALEAE
71. *Ornithocephalus* *Hooker*, Exot. Fl. 2 (1824) t. 127.
- XXVIII. NOTYLIEAE
72. *Notylia* *Lindley* in Bot. Reg. 11 (1825) t. 930.
 73. *Cryptarrhena* *R. Brown* in Bot. Reg. 2 (1816) t. 153.
 74. *Macradenia* *R. Brown* in Bot. Reg. 8 (1822) t. 612.
- XXIX. DICHAEAE
75. *Dichaea* *Lindley*, Gen. & Sp. Orch. Pl. (1833) 208.
- XXX. SARCANTHEAE
76. *Campylocentrum* *Bentham* in Journ. Linn. Soc. 18 (1881) 337.

Of the generic groups constituting the orchid flora of Middle America, the following have not as yet been found in Honduras: (1) Cypripedileae, (2) Cephalanthereae, (3) Tropidieae, (4) Zygopetaleae, (5) Trichocentreae, (6) Telipogoneae, (7) Pachyphyllae. The Cypripedileae are without representatives in the area formed by Guatemala, British Honduras, Salvador and Nicaragua. Of the three genera of the Cypripedileae represented in Middle America, *Selenipedium* is confined to Panama, *Phragmopedium* to Panama and Costa Rica and *Cypripedium* to Mexico. This peculiarity of distribution takes on added significance when it is borne in mind that with the exception of a single species in Trinidad, the Cypripedileae are without representatives in the West Indies. Only one species of the Cephalanthereae has been reported from Middle America. This is *Epipactis gigantea* Dougl., a species not known to occur south of Mexico. The Tropidieae, represented by two species, should occur in Honduras and will probably be found there as *Corymborchis flava* (Sw.) O. Ktze. is a native of Nicaragua, Salvador, British Honduras and Costa Rica and *Tropidia polystachya* (Sw.) Ames has been reported from Guatemala and Costa Rica. The Zygopetaleae are represented in Middle America by a single species, namely *Galeottia grandiflora* A. Rich. which is at present only known from Mexico and has been reported from Costa Rica. The Trichocentreae, represented by about ten species of *Trichocentrum*, have as yet been reported only from Mexico, Guatemala, Costa Rica and Panama. The Telipogoneae, represented in Middle America by approximately eight species, are not found north of Costa Rica. The Pachyphyllae, preponderantly South American, are at present known only from Middle America through *Centropetalum costaricense* A. & S. and *Pachyphyllum muscoides* (Kränzl.) Schltr., natives of Costa Rica.

Of the genera constituting the orchid flora of Honduras none is endemic and, with the exception of *Wulfschlaegelia*, *Lepanthopsis*, *Octomeria*, *Hexisea* and *Warszewiczella*, all of them are found in Guatemala.

Of the species constituting the flora of Honduras the following are endemic:

1. *Sobralia Edwardsii* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 10 (1933) 1.
2. *Pelexia callosa* *Ames* in Sched. Orch. 7 (1924) 15.
3. *Pelexia hondurensis* *Ames* in Sched. Orch. 2 (1923) 4.
4. *Lepanthes Edwardsii* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 4 (1933) 4.
5. *Lepanthes hondurensis* *Ames* in Proc. Biol. Soc. Wash. 44 (1931) 43.
6. *Pleurothallis hondurensis* *Ames* in Sched. Orch. 7 (1924) 20.
7. *Pleurothallis oscitans* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 2 (1934) 25.
8. *Octomeria hondurensis* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 4 (1933) 1.
9. *Epidendrum comayaguense* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 8 (1933) 1.
10. *Epidendrum Edwardsii* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 2 (1933) 1.
11. *Epidendrum hondurense* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 7 (1933) 1.
12. *Hexadesmia hondurensis* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 6 (1933) 1.
13. *Bletia Edwardsii* *Ames* in Proc. Biol. Soc. Wash. 45 (1932) 1.
14. *Bletia papillifera* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 6 (1933) 5.
15. *Oncidium hondurense* *Ames* in Bot. Mus. Leaflet. Harv. Univ. 1, no. 5 (1933) 1.

16. *Campylocentrum hondurenses* Ames in Sched. Orch. 5 (1923) 37.

Two species collected by Gustav Niederlein near Tegucigalpa were believed by Rudolf Schlechter to be endemic: namely *Spiranthes hondurensis* Schltr. in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 378 and *Pleurothallis Niederleinii* Schltr. in Beihefte Bot. Centralbl. 36, Abt. 2 (1918) 396. *Spiranthes hondurensis* is referable to synonymy under **Sarcoglottis Thelymitra** (Reichb.f.) Ames, comb. nov. (*Spiranthes Thelymitra* Reichenbach filius, Beitr. Orch. Centr.-Am. (1866) 66), a species formerly believed to be confined to Costa Rica and Salvador. *Pleurothallis Niederleinii* is inseparable from *Pleurothallis longissima* Lindl., a species which is widespread in Middle America and occurs in the West Indies.

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